

A record of a cecidophage from Lecithoceridae

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Abstract A larva of *Scythropiodes leucostola* (Meyrick) (Lecithoceridae, Lepidoptera) was observed to bore into and feed on a bud gall formed by *Biorhiza nawai* (Ashmead) (Cynipidae, Hymenoptera). Although cecidophagous moths have been recorded from ten families of Lepidoptera, to the best of our knowledge, this is the first report of a cecidophage from the family Lecithoceridae.

Key words Lecithoceridae, cecidophages, cynipid gall.

Cecidophages in moths

Galls are attractive food resources not only for gall-makers but also for other herbivores, since gall tissues generally contain more nitrogen and amino acids than normal plant tissues (McNeill & Southwood, 1977; Abe, 1995).

Cecidophagous organisms, which feed on the tissues of galls, have been divided into two categories; obligatory and facultative cecidophages (Mani, 1964). Obligatory cecidophages have been an ecologically highly specialized group that feeds obligatorily on the gall. On the other hand, facultative cecidophages feed on not only gall tissues but also normal plant tissues (*e. g.* leaves).

Cecidophagous moths have been recorded from ten families of Lepidoptera (Abe, 1997 and references therein); Stathmopodidae, Cosmopterigidae, Momphidae, Sesiidae, Tortricidae, Cochylidae, Pyralidae, Geometridae, Nolidae, and Noctuidae. Almost all the moths recorded as cecidophages are facultative ones (except for Ito & Hattori, 1982).

In this report, we found that a larva of *Scythropiodes leucostola* (Meyrick) (Lecithoceridae) bored into and fed on a bud gall formed by *Biorhiza nawai* (Ashmead) (Cynipidae, Hymenoptera) on an oak tree *Quercus serrata* (Fagaceae). Although *S. leucostola* has been reported to cause the death of a gall midge *Pseudosphondylia neolistae* (Diptera, Cecidomyiidae) by feeding the buds before the gall formation (Yukawa, 1983), we observed that *S. leucostola* fed the gall tissues. To the best of our knowledge, this is the first report of a cecidophage from the family Lecithoceridae.

A lecithocerid moth reared from a cynipid bud gall

A bisexual gall of *Biorhiza nawai* developed from a bud of *Quercus serrata* in May at Kamigamo Experimental Forest, Kyoto University, Kyoto City, Kyoto Prefecture, central Japan (35°05'N, 135°47'E, 150 m a.s.l.). The gall was sampled on 15 May 2001. The maximum diameter of the sampled gall is 15.7 mm. The gall was preserved in a plastic cup (6.5 cm in diameter, 4.0 cm in height), with wet tissue paper under laboratory conditions.

On 23 May, a lepidopteran larva was recognized to bore into and feed on the gall, judging from fecal pellets emitted from the gall. On 26–27 May, 16 adults of *B. nawai* emerged from the gall. The moth larva which emerged from the gall was reared with *Quercus* leaves until the adult eclosion. It was identified as *Scythropiodes leucostola* (Meyrick) (Lecithoceridae) according to the colour catalogue, *Moths of Japan* (Moriuti, 1982; for generic change see Park & Wu, 1997).

On 30 June, the gall was dissected with tweezers under a stereomicroscope to inspect its interior. As a result, 6 live hymenopteran larvae of parasitoids or inquilines and a dead adult of *B. nawai* were found.

Facultative cecidophage of *S. leucostola*

Bisexual galls of *B. nawai* are large (maximum diameter; 10–40 mm), and the galls are soft and fresh (Yukawa *et al.*, 1996). The effect of an *S. leucostola* larva on the *B. nawai* larvae may be insignificant, since almost all the adults of *B. nawai* successfully emerged from the gall. This is probably because the *S. leucostola* larva was not able to bore into the larval cell walls of *B. nawai*. This function of larval cell walls as a barrier against the gall inhibitors has been reported in the other cynipid gall (Abe, 1995).

S. leucostola has been known to be a generalist foliage feeder found on various tree genera; *Prunus*, *Elaeagnus*, *Quercus*, *Acanthopanax*, *Robinia*, and *Abies* (Moriuti, 1982). Therefore, *S. leucostola* is thought to be a facultative cecidophage.

Acknowledgements

We thank Kamigamo Experimental Forest Station, Kyoto University, for permitting us to use the study area. This study was partly supported by JSPS Research Fellowships for Young Scientists to S. Sugiura (No. 3895).

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摘 要

ヒゲナガキバガ科におけるえい食者の記録 (杉浦真治・山崎一夫・石井宏幸)

ゴマフシロキバガ *Scythropiodes leucostola* (Meyrick) (チョウ目ヒゲナガキバガ科) の幼虫が、ナラメリングタマバチ *Biorhiza nawai* (Ashmead) (ハチ目タマバチ科) によってコナラの芽に形成された虫えいに穿孔し摂食しているのが観察された。これまで、虫えいを摂食するチョウ目では 10 科が知られているが、我々の知る限りヒゲナガキバガ科では初めての記録である。

ゴマフシロキバガは様々な樹種の葉を食べることが知られており、これまで報告された多くのえい食者と同様、機会的えい食者であると考えられた。また、摂食された虫えいから、ナラメリングタマバチの成虫が多数羽化してきたことから、ゴマフシロキバガの幼虫による摂食が虫えい形成者に与える影響は少ないものと考えられた。

(Accepted September 17, 2001)